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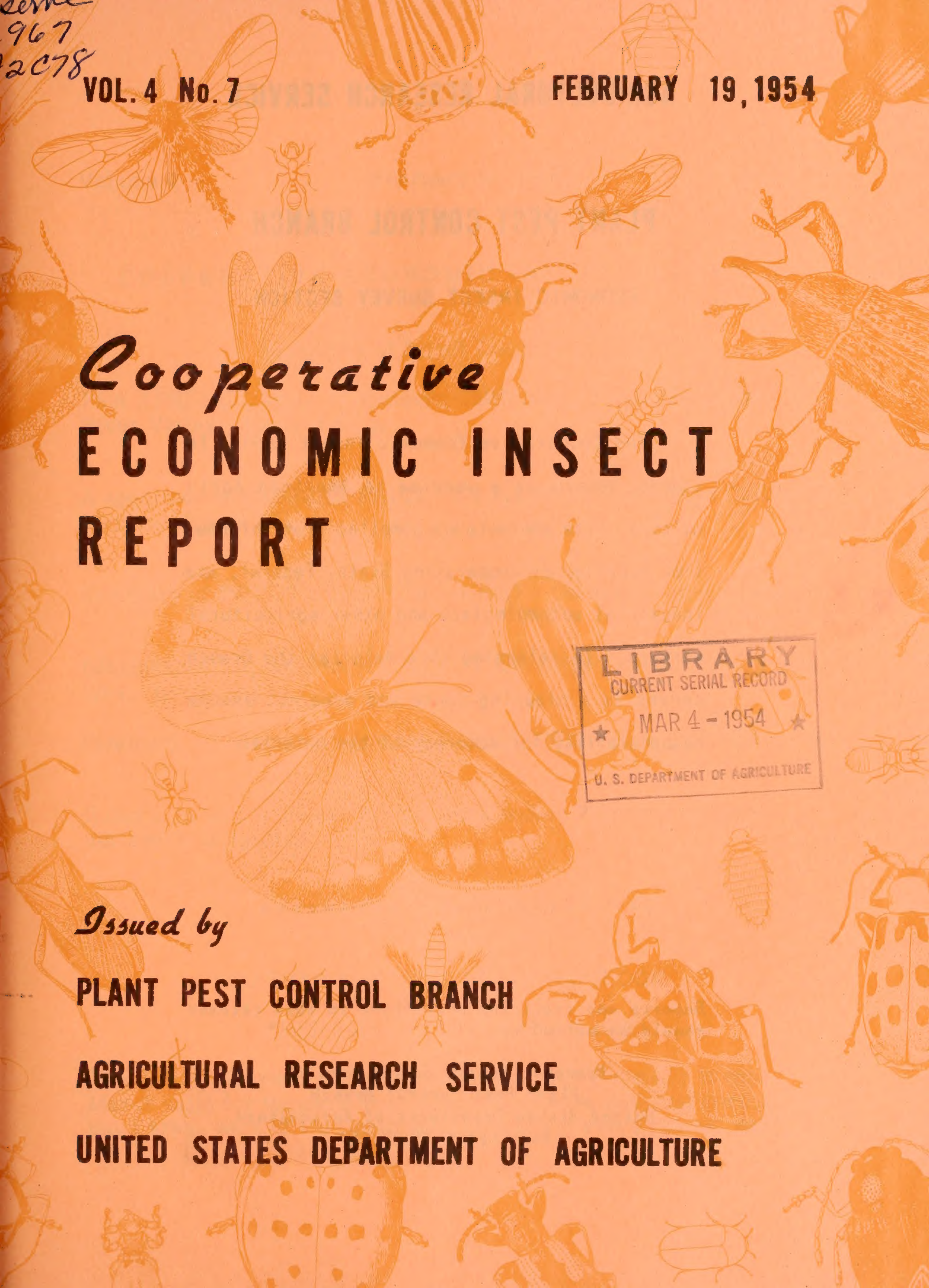

Cooperative ECONOMIC INSECT REPORT

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U. S. DEPARTMENT OF AGRICULTURE

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PLANT PEST CONTROL BRANCH
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Economic Insect Survey Section
Plant Pest Control Branch
United States Department of Agriculture
Washington 25, D. C.

Volume 4 February 19, 1954 No. 7

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

PEA APHID numerous in southern California; increasing in Salt River Valley. (page 129).

A specimen of MEXICAN FRUIT FLY taken . Tijuana, Baja California, Mexico. (page 130).

Summary of INSECT CONDITIONS - 1953 - Delaware. (page 134).

GRASSHOPPER, MORMON CRICKET and CHINCH BUG outlook for 1954. (page 138).

Summary of the more important FOREST INSECTS in 1953. (page 141).

Reports in this issue are for the week ending February 12 unless otherwise designated.

* *

WEATHER BUREAU'S 30-DAY OUTLOOK

*Mid-February to Mid-March 1954

The Weather Bureau's 30-day outlook for mid-February to mid-March calls for temperatures to average below seasonal normals in most areas west of the Continental Divide but above normal east of the Divide except for near normal in the Southeast. Fairly large week-to-week variations in temperatures about these averages are anticipated.

Precipitation is expected to exceed seasonal normals over most of the area from the Rockies to the Appalachians, providing relief from the dry spell which has prevailed. Subnormal amounts are predicted along the Atlantic Seaboard and near normal west of the Great Divide.

*This report released by the Weather Bureau on February 16, 1954

Weather forecast given here is based on the official 30 day "Resume and outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington, D. C. Price: $4.80 a year, $2.40 for six months.

* *

WEATHER FOR THE WEEK ENDING FEBRUARY 16, 1954

Unseasonably warm, dry weather, which persisted over most areas for the third consecutive week, further increased the seriousness of the low moisture supply in central portions of the Country. In the central and lower Great Plains strong southerly winds on several days caused rapid evaporation and considerable soil erosion. Water hauling continued in parts of western Pennsylvania and southern Iowa, wells are going dry in extreme southern Minnesota, and water supplies are becoming critically low in parts of Missouri, Arkansas, and Oklahoma. Also forests are becoming very dry, and numerous fires were reported in Louisiana and West Virginia.

East of the Continental Divide light precipitation occurred in New England, New York, and a few southeastern sections during the first part of the week, and light to heavy amounts near a frontal zone extending from Texas to the Great Lakes region at the end. The heavy amounts fell during thunderstorms which were quite general in central Missouri and west central Illinois. West of the Divide precipitation

(Weather continued on page 133).

CEREAL AND FORAGE INSECTS

PEA APHID (Macrosiphum pisi) - CALIFORNIA - Heavy infestation on alfalfa in Antelope Valley and numerous in other parts of southern California. (Campbell). ARIZONA - Not very abundant in alfalfa in Salt River Valley, but appears to be increasing. (Ariz. Coop. Rept.).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Fairly numerous on alfalfa in Whittier area, mostly adults, but a few nymphs observed. (Campbell).

A GRAIN MITE (Penthaleus major) - TEXAS - Attacking small grains lightly over widespread area. Have decreased greatly in north central and north Texas. (Davis). Light on barley and oats in Rockwall County (Garner), and light to medium on wheat near Oklaunion, Wilbarger County. (Davis).

GREENBUG (Toxoptera graminum) - GEORGIA - Some damage to young grain in Dougherty County. Twenty-five acres in one 300-acre planting destroyed. (Osburn, Feb. 1).

EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) - ARIZONA - Abundant in Salt River Valley alfalfa. Eggs very common in stems. A few first-instar larvae present. (Ariz. Coop. Rept.).

BROWN WHEAT MITE (Petrobia latens) - TEXAS - Attacking wheat in Wilbarger County area. (Davis).

LEAFHOPPERS - ARIZONA - Building up in alfalfa in Yuma area. (Ariz. Coop. Rept.).

FRUIT INSECTS

SAN JOSE SCALE (Aspidiotus perniciosus) - TEXAS - Very light infestation on peaches in Kaufman County. (Garner).

PEACH TREE BORER (Sanninoidea exitiosa) - TEXAS - Light and medium infestations on peaches and plums in Kaufman County. Trees in fairly good condition, though not treated for borers in two years. (Garner).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - MEXICO - One adult female taken in trap, Tijuana, Baja California, January 22. This is the first specimen ever trapped this far north in Baja California. The orchard in which the trap was located is only 2 1/2 miles south of the international line. The orchard contains various fruits, such as apples, apricots, cherimoyas, grapefruit, limes, oranges, peaches, pears, plums, sapotes, quinces, cherries, figs and guavas. (Berry). Some of the more important food plants of *A. ludens* are *Citrus grandis*, *C. sinensis*, *C. limonia*, *C. aurantifolia*, *Mangifera indica*, *Casimiroa edulis*, *C. tetrameria*, *Annona cherimola*, *A. reticulata*, *Mammea americana*, *Cydonia oblonga*, *Punica granatum*, *Prunus persica*, *Sargentia greggii* and *Inga inicuil*.

TRUCK CROP INSECTS

SEED-CORN MAGGOT (*Hylemya cilicrura*) - SOUTH CAROLINA - Moderate infestation in buds of spinach in Charleston area. (Cuthbert).

GREEN PEACH APHID (*Myzus persicae*) - FLORIDA - Ninety-five percent of cabbage plants lightly infested in experimental plantings at Sanford, Feb. 5. (Wilson). ARIZONA - Becoming numerous on lettuce throughout Salt River Valley. (Ariz. Coop. Rept.). SOUTH CAROLINA - Light infestation on spinach in Charleston County (Cuthbert).

CABBAGE CATERPILLARS - FLORIDA - Only six cabbage loopers (*Trichoplusia ni*) found in five cabbage fields examined in Sanford area, Feb. 5. (Wilson). SOUTH CAROLINA - A few adults of imported cabbageworm (*Pieris rapae*) noted in fields in Charleston County. (Cuthbert).

ONION THRIPS (*Thrips tabaci*) - ARIZONA - Becoming numerous on young onions in Salt River Valley. Treatment necessary in some areas. (Ariz. Coop. Rept.)

APHIDS - MARYLAND - Cabbage aphids very lightly infesting fall cabbage in Montgomery County. Parasites active. (Bissell, Harding). ARIZONA - A lettuce aphid (*Macrosiphum barri*) becoming numerous on lettuce throughout Salt River Valley. (Ariz. Coop. Rept.).

CABBAGE APHID (Brevicoryne brassicae) - FLORIDA - Less than 1 percent infestation in three cabbage fields in Sanford area, Feb. 5. (Wilson). CALIFORNIA - Moderate to serious infestations on cabbage and other crucifers in southern California requiring repeated control measures. (Campbell). ARIZONA - Common on cole crops around Phoenix in Salt River Valley. (Ariz. Coop. Rept.). SOUTH CAROLINA - Light to moderate infestations in most commercial cabbage plantings observed in Charleston area. (Cuthbert).

COTTON INSECTS

COTTON LEAFWORM (Alabama argillacea) - PUERTO RICO - Heavy infestation in cotton fields at Lajas, January 22. (Martorell).

STORED PRODUCTS INSECTS

A DERMESTID (Trogoderma granarium) - ARIZONA - Has been reported from seed and flour mills in following locations: Phoenix and vicinity (4 locations), Glendale (2 locations), Casa Grande (1 location), Tucson (1 location). Reports are largely from parts of buildings where flour and trash accumulate. One report of large numbers on outside of and between sacks of wheat. (Ariz. Coop. Rept.). CALIFORNIA - Collected in Kern County for first time December 7, 1953. Light to heavy infestation in mixed grains, barley and oats in a grain company building at Bakersfield. Additional light infestation found in warehouse at Bakersfield, December 14. (Armitage).

STORED-GRAIN INSECTS - TEXAS - Confused flour beetle (Tribolium confusum) very lightly infesting wheat (old crop) in Panhandle and South Plains. Also light general infestation of saw-toothed grain beetle, carpet beetle larvae and lesser grain borer. (Dines).

INSECTS AFFECTING MAN AND ANIMALS

WINTER TICK (Dermacentor albipictus) - TEXAS - Attacking horses and cattle lightly near Kerrville. Infestations decreasing. (Smith). PENNSYLVANIA - Collected on dairy animals in November in Wayne County. (Gesell).

CATTLE GRUBS - MARYLAND - Forty-eight cows and calves examined on 3 farms in Washington County, Feb. 5; 26 infested with one to six grubs each. Twenty-nine of 44 steers examined in Montgomery County, Feb. 10, found infested with from 1 to 12 grubs each. (Bissell, Harding). TEXAS - Considerable common cattle grub (Hypoderma lineatum) activity from Kerrville to Dallas as evidenced by behavior of cattle. (Smith).

RECENT IMPORTANT INTERCEPTIONS AT PORTS OF ENTRY

CITRUS BLACK FLY (Aleurocanthus woglumi Ashby) - Citrus leaves intercepted in airplane baggage from Mexico City, MEXICO were found infested with living eggs, larvae and pupae at San Antonio December 3, 1953. (Wallis).

DURRA STEM BORER (Sesamia cretica Led.) - Broomcorn in cargo from ITALY was found infested recently with living larvae at Baltimore (Vizant) and Boston (Lantz, Beauchamp).

GIANT AFRICAN SNAIL (Achatina fulica Fer.) - A specimen was intercepted in scrap metal in ship's cargo from the CAROLINE ISLANDS at San Pedro December 7, 1953 . (Roth).

ADDITIONAL NOTES

OKLAHOMA - Boxelder bug (Leptocoris trivittatus) is very numerous on inside of a Payne County farm home. (Fenton). Greenbug and other small grain pest conditions remain about the same as last week. (Dahms).

PENNSYLVANIA - Pine tube moth (Argyrotaenia pinatubana) infestation heavy in white pine in Allegheny County. (Udine). Carpet beetles sent in from all sections of State during the winter. (Pepper).

was generally moderate to heavy in the Pacific States, western Nevada, northern Idaho, western Montana, and central Arizona near the end of the period. This precipitation fell as snow in the mountains and extreme north, and snow depths in the eastern wheat region of Washington now range from 4 to 9 inches.

Average temperatures for the week were 5° or more above normal, except in the Central Valley of California where they averaged 2° to 3° below normal. Positive departures ranged up to 15° in the central Great Plains. On the 11th, 12th, and 13th, as a mass of cold Canadian air moved across the area east of the Continental Divide, temperatures fell to subzero levels in region near the Canadian Border, and to freezing or below as far south as the central portions of Texas, Mississippi, Alabama, and southern Georgia. This cool snap was followed by rapidly rising temperatures that reached record high levels for the season in north central regions. Dodge City, Kans., recorded 85° (a February record) on the 14th, Lamoni, Iowa 72° on the same date, and Evansville, Ind., 73° on the 15th. (Summary Supplied by the U. S. Weather Bureau).

SUMMARY OF INSECT CONDITIONS - 1953

DELAWARE

Compiled by H. E. Milliron

Corn Insects: EUROPEAN CORN BORER (*Pyrausta nubilalis*) pupation ranged from 50 to 60 percent by April 23 in Sussex County, and adults were generally abundant by May 14. Damage to field corn from Dover southward noticeably exceeded that of 1952, and was most severe in western Sussex County. Heavy injury to early sweet corn occurred at Georgetown, June 18, and at Harrington, July 23; later varieties suffered more extensive ear damage than usual. Records of the fall field-corn survey showed a state-average of 181 borers per 100 stalks, or a 35 percent increase over 1952, with the heaviest borer population and damage in western Sussex County. ARMYWORM (*Pseudaletia unipuncta*) - During late May and early June, severe losses resulted when large numbers migrated from adjacent heavily-infested rye at Slaughter Beach and, from barley, east of Smyrna. Invasions of lesser magnitude into cornfields were noted at several places in Sussex County during the same period. CORN EARWORM (*Heliothis armigera*) was more abundant and destrucitve than in 1952, especially in the southern section of the State. Leaf injury on field corn was heavy in the vicinities of Frederica and Milford and, at many locations in Sussex County, by June 25. Much injury to ears of canning corn was recorded in July and, during August and September, ears of field corn were severely damaged by worms of all instars. A CORN SAP BEETLE (*Carpophilus lugubris*) - Numerous adults appeared in late June and early July, especially on plants injured by borers and earworms. The population of all stages on sweet corn and the resultant injury, in July, appeared to exceed that in 1952 throughout southern Kent and Sussex Counties. Ears of field corn were also heavily infested in August and September at many places. GRASSHOPPERS (*Melanoplus* spp.) caused some marginal damage near Bridgeville and elsewhere in Sussex County. JAPANESE BEETLE (*Popillia japonica*) appeared to be somewhat less abundant than in the preceding year; activity was confined largely to Kent County, where only light injury to silks and leaves was encountered. FALL ARMYWORM (*Laphygma frugiperda* injured ears of field corn throughout the southern half of the State in September.

Alfalfa and Clover Insects: ALFALFA WEEVIL (*Hypera postica*) adults and larvae were feeding on young growth of alfalfa during March near Smyrna. Population generally was more abundant than in 1952; spotty, severe injury was detected at various locations in the central and southwestern sections of the State, especially in the vicinities of Smyrna, Hartly and Bridgeville in May and June. High larval counts were recorded in one-year-old fields near Leipsic and Newark during October. PEA APHID (*Macrosiphum pisi*) began to appear in March in the Smyrna-Leipsic area, serious damage to alfalfa occurred throughout Kent County and, in Sussex County as far south as Georgetown, in April and May on the first growth. POTATO LEAFHOPPER (*Empoasca fabae*) caused severe injury to alfalfa throughout the State in June and July. Alfalfa yellows was more pronounced generally than in any of the three preceding seasons. MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) began hatching in late March, but unfavorable weather retarded development during the first half of April. Nymphs were numerous generally on forage legumes by April 23; damage to alfalfa and red clover did not exceed that of 1952. ARMYWORM was very numerous in alfalfa at Leipsic and Milton in May and June. GREEN CLOVERWORM (*Plathypena scabra*) was abundant in alfalfa throughout the State from June to September; unusually destructive east of Smyrna in August. GRASSHOPPERS (*Melanoplus* spp.) caused noticeable defoliation in a large acreage of alfalfa south of Canterbury in late July. ALFALFA PLANT BUG (*Adelphocoris lineolatus*) adults were taken for the first time in the State on June 9 and, by August 6, the species was known to occur as far south as Felton. CLOVER LEAF WEEVIL (*Hypera punctata*) occurred more abundantly than in recent previous years, and caused the most injury to red clover in April and May.

Vegetable Insects: MEXICAN BEAN BEETLE (*Epilachna varivestis*) was destructive to snap beans during May and June from Milford southwestward to Bridgeville and, on lima beans later at numerous places in Kent and Sussex Counties, especially in the Milton area; somewhat less abundant than in 1952. BEAN APHID (*Aphis fabae*) heavily infested many lima bean fields during July in Sussex County near Slaughter Beach, Milton, Primehook Neck and Bridgeville; more extensive injury was observed than in the preceding year. SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) adults fed on lima-bean foliage throughout the season. GREEN CLOVERWORM larval activity on beans was much reduced compared to that of the preceding season. TWO-SPOTTED SPIDER MITE (Tetranychus bimaculatus) was heavy on limas at several locations in Sussex County and, on snap beans, at Bridgeville in August. IMPORTED CABBAGEWORM (Pieris rapae) was most prevalent pest on cabbage generally. CABBAGE LOOPER (Trichoplusia ni) - Heavy feeding was noted on large acreages of broccoli at several locations in Kent and Sussex Counties during August and September. CABBAGE APHID (Brevicoryne brassicae) was somewhat more abundant than in 1952, but nowhere unusually destructive. A FLEA BEETLE (Phyllotreta cruciferae) - Numerous adults attacked young cabbage plants at Greenwood in May and other similar plantings at various places in Kent and Sussex Counties, in July and August. A large acreage of broccoli at Middletown was infested, August 6. STRIPED CUCUMBER BEETLE (Acalymma vittata) population and injury to cucumbers was about normal; damaged squash at several places in Sussex County, May 21. SQUASH BUG (Anasa tristis) more common than the HORNED SQUASH BUG (A. armigera) on squash and pumpkin from Dover southward; no serious infestations were observed. SQUASH VINE BORER (Melittia cucurbitae) activity was noted in the Georgetown area during June.

SQUASH BEETLE (Epilachna borealis) infested cucumbers near Bridgeville, June 18; later, it became abundant on and injured squash at several points between Bridgeville and Milford. POTATO AND TOBACCO FLEA BEETLES (Epitrix cucumeris and E. hirtipennis) numbers on untreated potatoes were fewer than usual except in May at Dover; somewhat less abundant on tomatoes generally. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) was very troublesome throughout the season on tomatoes from Dover southward; severe feeding on potatoes was noted at several places, especially at Georgetown and Bridgeville in May and, at Frederica, June 18. TOMATO RUSSET MITE (Vasates lycopersici) first occurred in the State as a greenhouse infestation near Wilmington, May 29; first field infestation was at Bethel, August 12. Reported also from St. Georges and Glasgow on August 25. TOBACCO HORNWORM (Protoparce sexta) - Scattered infestations on tomatoes were found from Newark southward during July. Second generation was more destructive generally throughout Sussex County; severe defoliation occurred at Canterbury, August 27. No TOMATO HORNWORM (P. quinquemaculata) infestations have been found in the State since 1950. POTATO APHID (*Macrosiphum solanifolii*) was not severe on potatoes at any location. Infested a large acreage of tomatoes on Primehook Neck, July 30. POTATO LEAFHOPPER was prevalent generally on potatoes by the end of May; became abundant and caused severe tipburn in some untreated plantings in Kent and Sussex Counties by June 25.

Fruit Insects: CODLING MOTH (*Carpocapsa pomonella*) activity was about normal for recent years. EUROPEAN RED MITE (*Metatetranychus ulmi*) eggs were abundant on apples and peaches during April, but unfavorable weather delayed any threat of serious injury until July, when large increases in population occurred in some plantings in Kent County. RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) larval activity was apparent in July, especially in untreated orchards. YELLOW-NECKED CATERPILLAR (*Datana ministra*) larvae were feeding on apple terminals in the Camden-Woodside area, July 23. PLUM CURCULIO (*Conotrachelus nenuphar*) activity was about normal; damage was light in most treated orchards, June 25.

Ornamental and Shade Tree Insects: BOXWOOD PSYLLID (*Psylla buxi*) injury was conspicuous from Newark to Harrington, May 28. AZALEA LACE BUG (*Stephanitis pyrioides*) abundant and injurious at Newark, June 11. MIMOSA WEBWORM (*Homadaula albizziae*) - Honey locusts throughout the State suffered a severe set-back in July; mimosa trees were attacked to a less extent later in the season. ELM LEAF BEETLE (*Galerucella xanthomelaena*) was present in abundance throughout the State; heavy feeding was noted between Dover and Georgetown. YELLOW-NECKED CATERPILLAR - Oaks were attacked in late July and early August and partially defoliated. BAGWORM (*Thyridopteryx ephemeraeformis*) caused partial to complete defoliation of several kinds of conifers in Kent and Sussex Counties during August; sycamore trees west of Milford were badly damaged, August 20. PERIODICAL CICADA (*Magicicada septendecim*) was confined to northern and western New Castle County. First adults appeared at Newark, May 15, and were moderately abundant until early July. Twig injury was conspicuous in oaks and other forest trees.

GRASSHOPPER, MORMON CRICKET AND CHINCH BUG OUTLOOK FOR 1954

Reported by H. A. Hauke

Data secured from annually conducted grasshopper, Mormon cricket, and chinch bug cooperative surveys is the basis for all voluntary and organized paid control work. Since climatic conditions can drastically affect potential populations revealed by surveys, the voluntary and organized work actually undertaken in 1954 will be determined by nymphal surveys which are conducted as grasshoppers and Mormon crickets hatch and when chinch bugs emerge from winter hibernation.

Grasshoppers

Surveys of grasshoppers (see map) in crop land areas show build-ups in portions of southeastern Nebraska, eastern Kansas, southern Iowa, all of Missouri, and central Wisconsin. These infestations range from light (3 to 7 per square yard) to very severe (28 or more per square yard). The greatest increase of grasshopper populations appears to be in Missouri and Wisconsin. In the rest of the states in the western half of the United States, crop land infestations generally are scattered and local. Grasshopper infestations serious enough to warrant large-scale control programs in range land areas are expected in 13 of the western states in 1954. These infestations cover approximately 4,733,240 acres of range land. Of this total 2,636,610 acres are private lands, 604,150 acres state lands, and 1,492,480 acres public domain. The latter lands are under the management of the Forest Service, U. S. Department of Agriculture; and Indian Service, Department of the Interior. In Arizona, California, Nevada, and Utah, 329,140 acres are private lands, 2,000 acres state lands, and 495,100 acres public domain. Idaho, Montana, Oregon, and Wyoming have infestations on 168,020 acres of private land, 24,200 acres of state land, and 369,780 acres of public domain. In Nebraska, 400,000 acres of private sandhill range are infested. Colorado, New Mexico, Oklahoma, and Texas have infestations totaling 1,739,450 acres on private lands, 577,950 acres on state lands, and 627,600 acres on public domain. The most urgent situation from the standpoint of need for organized control efforts in 1954 appears to be in north central New Mexico, south central Colorado, central Idaho, and the panhandle areas of Oklahoma and Texas.

Mormon Crickets

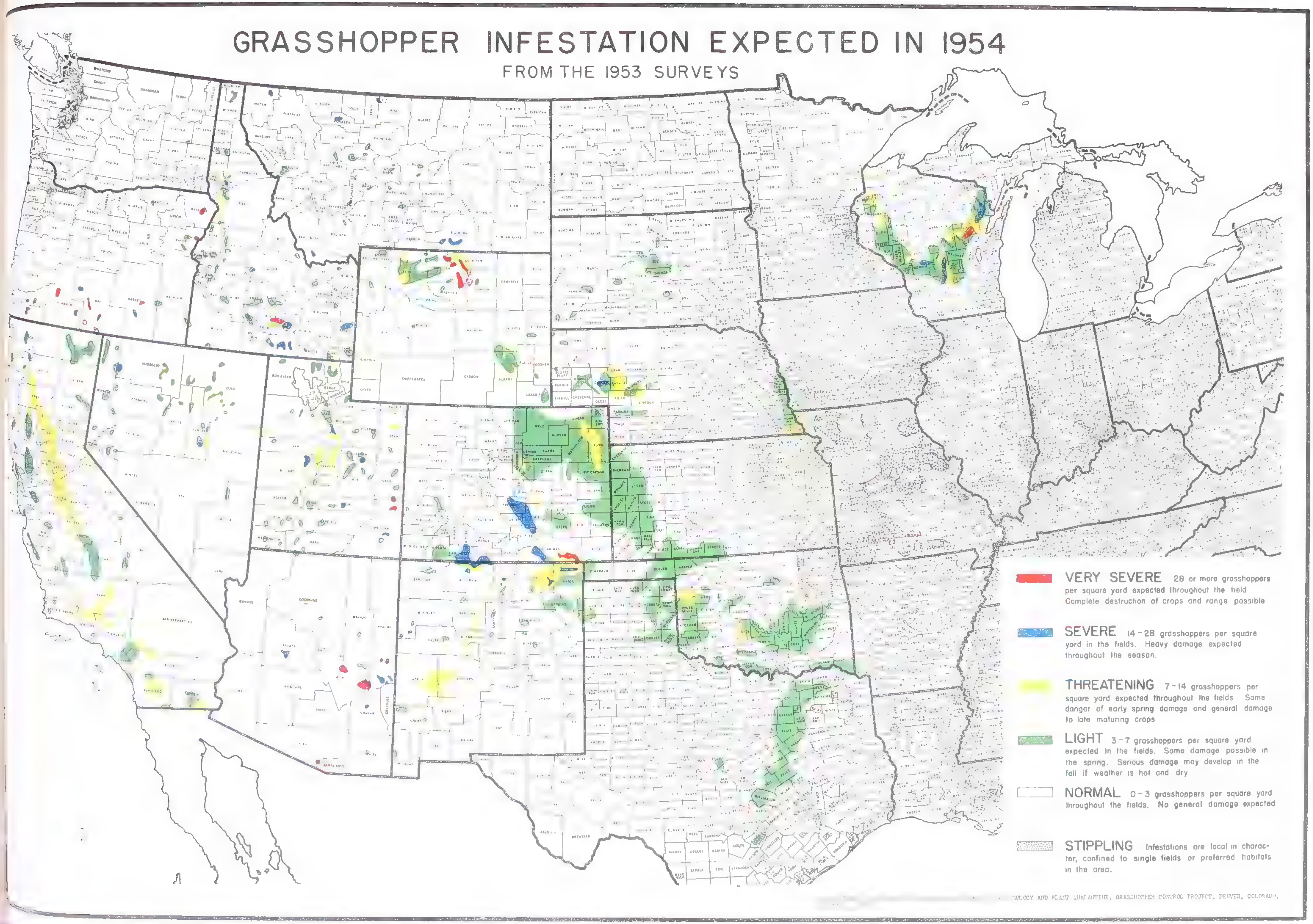
The control of Mormon crickets could be necessary in five western states in 1954. A total of 122,000 acres is infested, of which 8,250 acres are on private land, 2,300 acres on state land, and 111,450 acres on public domain. Parts of Elko, Humboldt, Eureka, and Lander Counties, Nevada, and the Mono Lake area and the northeast area in California have infestations on public domain totaling 40,000 acres. The infestation in Utah covers 51,400 acres and is found in parts of Sanpete, Millard, Piute, San Juan, and Summit Counties; 3,600 acres of this are on private land and 47,800 acres on public domain. In Idaho, parts of Ada, Camas, Cassia, Clark, Elmore, Fremont, Payette, and Washington Counties are infested. Of the 22,000-acre total, 4,650 acres are on private lands; 2,300 acres on state land; and 15,050 acres in public domain. The Montana infestation covers 5,000 acres of public domain in the Pryor Gap area in Big Horn County. The most serious single Mormon cricket infestation, scheduled for control during 1954, will be in portions of Utah.

Chinch Bugs

Chinch bug surveys (see map) were conducted in 9 states in the fall of 1953: Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, Oklahoma, and Wisconsin. Chinch bug populations vary a great deal from year to year, depending upon weather conditions. Results of surveys as reported by the states following their processing of the soil samples collected indicate that these bugs could be of economic importance in 1954 in northeastern Arkansas, southeastern Missouri, northern Illinois, and northwestern Indiana, with local trouble spots in northeastern Indiana, south central Illinois, east central Oklahoma, southeastern Kansas, and southeastern Nebraska.

GRASSHOPPER INFESTATION EXPECTED IN 1954

FROM THE 1953 SURVEYS



🟥 **VERY SEVERE** 28 or more grasshoppers per square yard expected throughout the field. Complete destruction of crops and range possible

🟦 **SEVERE** 14 - 28 grasshoppers per square yard in the fields. Heavy damage expected throughout the season.

🟨 **THREATENING** 7 - 14 grasshoppers per square yard expected throughout the fields. Some danger of early spring damage and general damage to late maturing crops

🟩 **LIGHT** 3 - 7 grasshoppers per square yard expected in the fields. Some damage possible in the spring. Serious damage may develop in the fall if weather is hot and dry

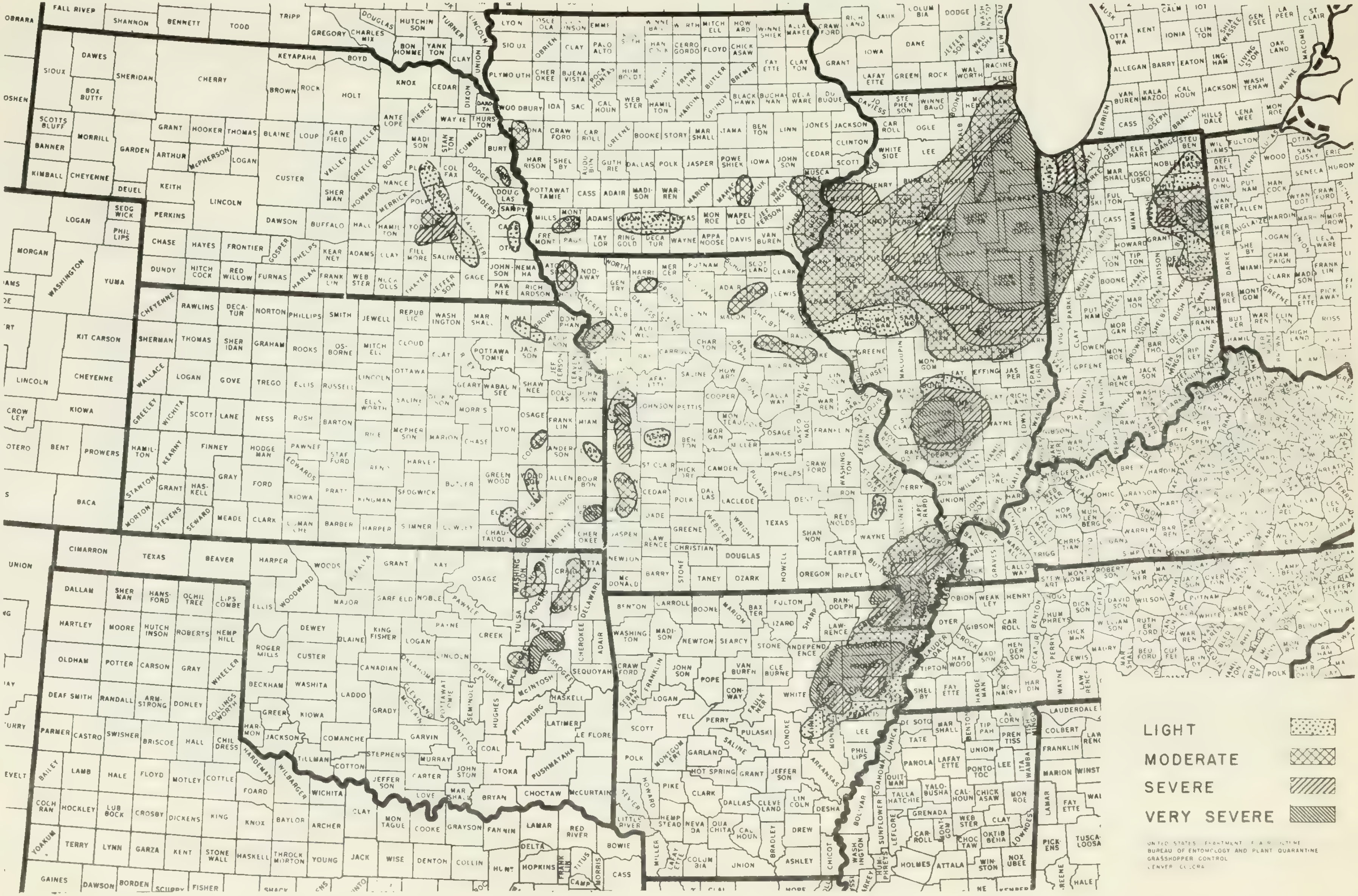
☐ **NORMAL** 0 - 3 grasshoppers per square yard throughout the fields. No general damage expected

▨ **STIPPLING** Infestations are local in character, confined to single fields or preferred habitats in the area.

OLOGY AND PLANT QUARANTINE, GRASSHOPPER CONTROL PROJECT, DENVER, COLORADO.

GPO 831297

CHINCH BUG INFESTATION IN FALL OF 1953


LIGHT
MODERATE
SEVERE
VERY SEVERE
UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
GRASSHOPPER CONTROL
DENVER, COLORA

UNITED STATES DEPARTMENT OF AGRICULTURE
Forest Service
Washington 25, D. C.

THE MORE IMPORTANT FOREST INSECTS IN 1953 - A SUMMARY*

Prepared by the Division of Forest Insect Research

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The year 1953 was one of continued serious outbreaks of forest insects in the United States and Alaska. This report of insect conditions in the nation's forests is a compilation of information obtained from forest surveys and miscellaneous reports. Records from Federal entomologists and those obtained from cooperators in Federal land-managing agencies, state entomologists and forestry agencies, and a large number of private timberland owners and operators have contributed to this summation. This ever-increasing cooperation is resulting in more prompt detection of insect outbreaks and more complete knowledge of forest insect conditions throughout the country. The detailed survey information obtained in epidemic situations has served as a basis for successful control action against several destructive species.

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*Extracted from the Cooperative Economic Insect Report, Vol. 4, No. 7, February 19, 1954.

This report has been confined to the more important species and situations. Numerous records were received of minor outbreaks of less important species which may be of considerable importance locally, but these are not included in the national summary.

Personnel of the Division of Forest Insect Investigations, Bureau of Entomology and Plant Quarantine, were transferred to the Forest Service by the action of the Secretary of Agriculture in his reorganization plan put into effect on November 2, 1953.

ENGELMANN SPRUCE BEETLE (*Dendroctonus engelmanni* Hopk.) - The extensive outbreak of the Engelmann spruce beetle that has been in progress in Colorado since 1943 on the Routt, Arapaho and White River National Forests has been reduced to endemic status except for a few small spots of infestation. During 1953, however, a new and separate outbreak was discovered on the Uncompahgre and San Juan National Forests. It apparently developed from a heavy windstorm in 1950 that resulted in scattered but numerous wind-damaged trees. An immediate start was made on a program to reduce this infestation estimated to involve 140,000 trees on about 20,000 acres. Another spruce beetle infestation has arisen on a logging unit on the San Juan. Considerable build-up has occurred in slash and cull trees and has spread to standing timber.

The spruce beetle epidemic reported in Idaho and Montana in 1952 continues. Surveys during 1953 on seven National Forests and other land ownerships involved in this outbreak substantiated the forecast of a 2-to-1 increase. It has been estimated that since July of 1952, 2,684,000 trees have been killed totalling 1.8 billion board feet of spruce. An active logging program supplemented by some direct control is being used to combat this outbreak.

The Engelmann spruce beetle is not causing excessive losses in other western forests.

DOUGLAS-FIR BEETLE (*Dendroctonus pseudotsugae* Hopk.) - The Douglas-fir beetle continues to kill large volumes of timber in the western areas. The situation in Oregon and Washington that developed following windstorms in 1950-51 is still the most serious epidemic. The 1953 survey showed that the Douglas-fir beetle was epidemic on approximately 4,832,800 acres. This, however, reveals only kill in 1952 and prior years. The effects of 1953 kill will be surveyed during 1954. More than one billion board feet of fir was killed by these bark beetles during 1951. An additional blowdown of 1 1/2 billion feet in 1952-53, mainly in Washington, intensified the overall situation. There has been a general decline in infestation west of the Cascade Range in both Oregon and Washington although there are exceptions in some areas. The beetle situation in the eastside stands remains highly aggressive. The worst areas are on the Umatilla National Forest in locations that have been defoliated by spruce budworm for several years. In some drainages practically all the Douglas-fir of saw timber size is being killed. Considerable tree mortality was recorded on the Wallowa, Whitman and Mt. Hood National Forests in Oregon, and the Chelan, Wenatchee, and Snoqualmie Forests in Washington. Attempts to salvage blowdown and insect-killed timber are being pressed in these areas.

The Douglas-fir beetle is causing widespread and serious losses in many areas in the Northern Rocky Mountains, Colorado, Utah and the Southwest. It is at a low level in California except in the extreme northwestern part of the state.

WESTERN PINE BEETLE (Dendroctonus brevicomis Lec.) - The western pine beetle has shown epidemic tendencies during the past few years in some western areas. After nearly a decade of endemic losses, this species reached epidemic proportions in eastern Oregon and Washington. By 1953, sizable groups of infested mature timber occurred on the Deschutes and Mt. Hood National Forests with the Yakima Indian Reservation suffering severe losses. Salvage logging is in progress. In the other ponderosa pine stands the western pine beetle is at a relatively low level.

MOUNTAIN PINE BEETLE (Dendroctonus monticolae Hopk.) - The mountain pine beetle continues to destroy large volumes of western white pine in the northern Rocky Mountains. The most serious situation is on the Clearwater in Idaho. The area is under sales contract which will take care of the most heavily infested areas. A localized infestation in lodgepole pine on the Targhee National Forest was discovered this past season which could indicate a trend in these extensive lodgepole stands. A survey on the Wasatch and Ashley National Forests in Utah in 1953 showed increasing activity by this species in lodgepole pine. The mountain pine beetle has been in epidemic status in stands of lodgepole, sugar, western white, and second growth ponderosa pine stands in Oregon and Washington for several years. The heaviest losses in 1953 were found on the Wenatchee, Snoqualmie and Fremont National Forests. The outbreak on the Deschutes National Forest, which has been a threat to extensive lodgepole stands for several years, has declined slightly. The most serious outbreak at present is in second growth ponderosa pine on and adjacent to the Whitman National Forest in Oregon. Salvage is being used wherever possible. Following severe defoliation of lodgepole pine in Yosemite National Park in California by a needle miner, the mountain pine beetle has built up in weakened trees and threatens timber of scenic value to the Park.

BLACK HILLS BEETLE (Dendroctonus ponderosae Hopk.) - The Black Hills beetle continues in outbreak status in ponderosa pine stands on parts of the Dixie National Forest and Bryce Canyon National Park in Utah. Control work is under way to reduce the epidemic. In the Rocky Mountain states the species is at an endemic level, generally speaking. A cooperative control program on federal, state and private land in the Bighorn area in Wyoming in 1953 was successful in reducing a rapidly developing epidemic to a point where some additional work this season should return it to endemic level. There has been a build-up of the beetle on the Uncompahgre National Forest in southwest Colorado which has caused an important loss in high value pines. Three small centers of infestation were located in northern New Mexico this season.

JEFFREY PINE BEETLE (Dendroctonus jeffreyi Hopk.) - The Jeffrey pine beetle is showing epidemic tendencies for the third year in northern California on the Lassen National Forest and Lassen Volcanic National Park. Here it is causing considerable loss in high value timber and in recreational areas. Salvage and direct control measures are being used to reduce the outbreak.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.) - An epidemic of southern pine beetle in Mississippi that since June 1952 killed 32 million feet of pine was reduced to endemic level by a vigorous cooperative control program coupled with some natural reduction. The species has increased in activity, however, in western North Carolina and eastern Tennessee. While there are no extensive areas of heavy infestation involved, there are a number of areas where the species is showing epidemic tendencies, having increased in severity during the latter part of the summer. The southern pine beetle builds up populations rapidly and prompt detection is essential to any program to minimize losses.

BLACK TURPENTINE BEETLE (Dendroctonus terebrans(Oliv.)) - This beetle has followed behind the southern pine beetle infestation in east Texas and Mississippi developing in stumps after logging. It has also developed after current logging operations in other areas in Louisiana, Alabama, and Georgia. An outbreak on the Osceola National Forest, which developed in 1950, is still active. Chemical treatment of stumps following logging has prevented development of large populations in many areas. This species was formerly considered relatively unimportant but in recent years has been killing standing timber in excessive amounts.

OTHER DENDROCTONUS BEETLES- The southwestern pine beetle, Dendroctonus barberi Hopk., in association with other species of Dendroctonus has been responsible for the killing of approximately 80 million feet of ponderosa pine over the approximately 6 million acres of pine in Arizona and New Mexico during the past year. The loss occurs as scattered trees or small concentrations rather than extensive areas of kill..

ENGRAVER BEETLES - Two species of Pseudohylesinus bark beetles are involved in a serious outbreak in stands of silver fir in northwestern Washington. The 1953 mortality of silver fir is the heaviest yet recorded. From the Canadian border in western Washington to the McKenzie River in west-central Oregon a great many of the stands containing silver fir show evidence of damage. Damage is practicularly heavy in the Mt. Baker area. Damage has been recorded on 603,400 acres with heavy and very heavy infestations on 93,400 acres. Salvage logging is being pushed as rapidly as possible.

The fir engraver, Scolytus ventralis Lec., was epidemic in eastern California from San Diego to Oregon in 1952 but this season only mild epidemic conditions are present in the same area. The species is still epidemic in fir stands on the Sandia Mts. in central New Mexico.

The various species of Ips are active in many areas of the country. In California, Ips species are mainly at an endemic level while in Arizona and New Mexico because of drought conditions, tree killing is common in vast areas of pinyon pine type. Pinyon has a low commercial value but in localized areas has a high value because of limited tree cover practically all of which is pinyon pine. In the southern part of the country, Ips species have been causing considerable damage where drought conditions no doubt have played a part in building up populations. Scattered losses caused by Ips total a significant amount over extensive acreages.

WHITE PINE WEEVIL (Pissodes strobi (Peck)) - The white pine weevil, while not a killer of trees, is a serious pest of pine killing terminal growth and causing significant losses in growth. Plantations of young stock are often depleted by repeated attacks on high percentages of the trees. The species is a serious pest in the Northeast and in the Lake States on white pine and in the latter area, jack pine is a favored host with red pine showing considerable damage in many plantations.

SAWFLIES - The larch sawfly, Pristiphora erichsonii (Htg.), caused widespread defoliation in Minnesota again in 1953. Aerial and ground surveys showed approximately 450,000 acres of 657,000 of larch type in Minnesota partially to completely defoliated. Larch sawfly populations in northwestern Wisconsin increased over 1952 but remained relatively lighter than in Minnesota.

For several years, increasing populations of sawflies in the genus Neodiprion have been noted in separate widespread areas. There has been a general increase on various host plants country-wide. An undescribed species of Neodiprion caused considerable defoliation of shortleaf pine on the Hoosier National Forest in southern Indiana. Several undescribed species have been active in southern pines according to reports received from Florida, Georgia, South Carolina, and Virginia. There were three species of pine sawflies of local importance in east Texas during the year. The loblolly pine sawfly that was a problem in Arkansas from 1940-47 now is at a high population level in Louisiana. An outbreak of *Neodiprion fabricii* (Leach) on shortleaf pine in Alabama during 1952 has decreased in intensity. A sawfly on red and white fir recently has become epidemic in many sections of California with heavy defoliation in local areas. During the summer of 1953 a striking reduction in populations was noted in some areas as the result of a virus disease affecting the larvae. It still is epidemic in character in other areas. The lodgepole pine sawfly, also a *Neodiprion* species, reported in 1952 in epidemic status on 19,800 acres was noted in 1953 on 69,700 acres on the Willamette and Deschutes National Forests in Oregon. Defoliation has been heavy in some stands with danger of killing if it continues another year. Trees weakened by defoliation are subject to attack by secondary bark beetles.

PINE BUTTERFLY (*Neophasia menapia* (F.&F.)) - The pine butterfly is now present in outbreak numbers on about 169,000 acres of high value ponderosa pine on the Boise National Forest. This species has become epidemic in the past only at long intervals but causes serious damage during these occasional outbreaks. Past epidemics have resulted in great losses in ponderosa pine. Up to a billion board feet has been lost in a single outbreak. Severe defoliation can kill trees and partially defoliated trees are weakened so that they are susceptible to secondary bark beetle attack.

SPRUCE BUDWORM (*Choristoneura fumiferana* (Clem.)) - The spruce budworm continues to be a serious pest in widespread areas of the country. An active control program from 1949-1953 in Oregon and Washington has prevented serious losses of Douglas-fir and true fir. Surveys in 1953 reveal noticeable infestation on 1,136,000 acres which is about 440,000 less than in 1952. All of the acreage of infestation in 1953 classified as epidemic was confined to the Blue Mountains area of Oregon.

The area of infestation by spruce budworm in Montana and Idaho expanded from 1,900,000 acres in 1952 to 2,100,000 in 1953. There was a continued increase in total acreage infested and a marked increase in population densities in nearly all forests. The total acreage of heavy defoliation, however, was reduced by a spraying operation during 1953. The spruce budworm in the intermountain areas of southern Idaho and Utah continues to increase both in size of area defoliated and intensity. Damage thus far has been most severe in Alpine fir and Engelmann spruce on the Boise National Forest but Douglas-fir and true fir on the Payette National Forest is also being heavily defoliated. The budworm is in epidemic status on 500,000 acres in parts of Arizona and New Mexico. Principal damage thus far has been to the understory although top killing is taking place in the over story. The species is working on various firs including corkbark, Alpine, White and Douglas-fir.

Generally speaking, the acreage defoliated by spruce budworm in the Northeast decreased in 1953. An increase in intensity of feeding was noted, however, in a few spots. An area of approximately 20,000 acres around Madawaska Lake in northern Maine has reached a point where further defoliation could result in serious damage. A heavy flight of moths was noted around two towns in Vermont this summer. Egg surveys revealed no heavy deposition of eggs but a general distribution over a wide area.

The jack pine form of the spruce budworm, now considered a distinct species by Canadian taxonomists, occurs in the Lake States. Stands in lower Michigan showed a decline in severity of infestation in 1953. Approximately 10,000 acres of merchantable jack pine in upper Michigan was quite severely defoliated.

MISCELLANEOUS DEFOLIATORS - The forest tent caterpillar (_Malacosoma disstria_ Hbn.) continued in epidemic form over millions of acres of aspen type throughout the northern part of the Lake States. The same species showed striking increases in severity in New York State, the epidemic doubling in area over that defoliated in 1953. An aerial survey in 1953 showed an area of 7,489,000 acres infested with nearly a million acres classified as heavy. The forest tent caterpillar is generally distributed in the extreme eastern and western portions of Vermont with many areas showing heavy defoliation.

The fall cankerworm (_Alsophila pometaria_ (Harr.)) is causing considerable defoliation of hardwoods in the southern Appalachians. It is estimated that 120,000 acres were defoliated in 1953. The variable oak leaf caterpillar (_Heterocampa manteo_ (Dbldy.)) was reported to have defoliated very extensive areas in central and western

Tennessee. A geometrid (Anacamptodes pergracilis (Hlst.) was noted near Alexandria, Louisiana where it completely defoliated about 600 acres of pond cypress., In Idaho the green-striped looper (Melanolophia imitata (Wlk.)) has built up high populations on and adjacent to the St. Joe National Forest during the past three years. Feeding has occurred on Douglas-fir, grand fir, western hemlock and western cedar. Several hundred thousand acres are involved in the outbreak. The only previously recorded outbreak of this species in this area subsided without causing tree mortality.

The gypsy moth (Porthetria dispar (L.)) defoliated larger areas of hardwoods in 1953 than previously have been recorded since its introduction in 1869. Nearly 1,490,000 acres in the New England States and New York showed defoliation.

The Great Basin tent caterpillar (Malacosoma fragilis Stretch) is causing much damage in southwestern Colorado. Aspens over large areas have suffered repeated defoliation and damage has increased. The species is also defoliating aspen in northern New Mexico where some killing has occurred in spots where defoliation has been repeated for several years.

The lodgepole needle miner (Recurvaria milleri Busck) is defoliating trees on about 45,000 acres in Yosemite National Park and 3,000 acres in Sequoia-Kings Canyon National Park. Lodgepole pine over a wide area around the Tenaya Lake-Tuolumne Meadows part of Yosemite is heavily infested. Not only is this species destructive by its feeding but its activity renders the trees attractive to subsequent attack by mountain pine beetle.

For several years the walkingstick (Diapheromera femorata (Say)) has been quite active in widely separated areas. Noticeable defoliation by this species was reported from several areas in northern Wisconsin. Approximately 1,200 acres on the Menominee Indian Reservation were defoliated. Two areas in western Maryland and south-central Pennsylvania were surveyed by airplane in 1953. One outbreak covered 600 acres while the second covered 5,800 acres in Pennsylvania and 1,760 acres in Maryland. Because of the long feeding period, this insect can cause serious damage to hardwoods.

MISCELLANEOUS INSECTS - The Saratoga spittlebug (Aphrophora saratogensis (Fitch)), is a constant problem in pine plantations in the Lake States. Each year control projects are required to protect young trees. The damage decreases as the trees gain height and closed stands develop. Surveys in 1953 showed 14,450 acres in danger of considerable damage from heavy populations.

A species of Matsucoccus scale, probably new, presents a serious threat to red pine in the Northeast. First found in Connecticut a few years ago, it is gradually expanding in area around Easton. It is also generally distributed in the central part of Long Island with a few spot infestations in lower New York in Westchester County. Observations show that this species, while requiring several years to kill a tree, is thorough in action. Numerous examples have been seen where no trees are alive in infested plantings after a few years.

ALASKA

During the second annual survey program in Alaska during 1953, considerable emphasis was placed on the black-headed budworm, Acleris variana (Fern.), which was the primary pest under consideration in 1952. The outbreak has been present on the Tongass National Forest for the past 5 years. In 1952, defoliation of hemlock by the budworm was very heavy throughout approximately 8 million acres of the Tongass and there was feeding to a lesser degree on 3.6 million acres. During 1953, extensions of heavy feeding were noted and the budworm is now considered as present over the entire forest -- an area more than 16 million acres. Populations are lower south of Frederick Sound where the outbreak was first noticed. Coupled with the lighter budworm defoliation south of Frederick Sound was evident feeding by the hemlock sawfly, Neodiprion tsugae Midd.. The sawfly which has been especially noticeable on the east side of Prince of Wales Island for the past three years has now been found in scattered epidemic populations between Ketchikan and Petersburg, an area of approximately 4,000,000 acres.